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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/724,062	12/01/2003	Takuya Hamada	HAMA3008/EM	1728
23364	7590	11/28/2005	EXAMINER	
BACON & THOMAS, PLLC 625 SLATERS LANE FOURTH FLOOR ALEXANDRIA, VA 22314			THOMPSON, CAMIE S	
			ART UNIT	PAPER NUMBER
			1774	

DATE MAILED: 11/28/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/724,062

Applicant(s)

HAMADA ET AL.

Examiner

Camie S. Thompson

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,2,5-9 and 12-14 is/are rejected.
- 7) ☒ Claim(s) 3,4,10 and 11 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____.  |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

2. Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by JP 02-120389.

The Japanese reference discloses a fluorescent screen that comprises a phosphor comprising a combination of a green phosphor of the formula  $(La, Ce, Tb)_2O_3 \cdot 9P_2O_5 \cdot 2SiO_2$  with a red phosphor having the formula  $Y_2O_3:Eu$ .

3. Claim 1 is rejected under 35 U.S.C. 102(e) as being anticipated by Mueller et al., U.S. Patent Number 6,686,691.

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Mueller discloses a phosphor mixture comprising two phosphors (see reference claim 1). The reference also discloses that the first phosphor comprises a green phosphor ( $\text{SrGa}_2\text{S}_4\text{:Eu}$ ) and the second phosphor comprises a red phosphor ( $\text{SrS:Eu}$  or  $\text{CaS:Eu}$ ) (see column 4, lines 37-48).

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-2 and 5-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over deSouza, U.S. Patent Number 4,684,353.

The deSouza reference discloses a phosphor mixture comprising copper-activated zinc sulfide phosphor (63%) and strontium titanate (15%) as per instant claims 1-2 and 5-7 (see Example 4). The reference does not specifically disclose that the strontium titanate is a phosphor. Strontium titanate crystals are luminous. Therefore, it would have been obvious to one of ordinary skill in the art to have the strontium titanate as a phosphor as the crystal have a luminescent effect.

6. Claims 1-2, 5-9 and 12-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Itoh et al., U.S. Patent Number 5,789,856 in view of deSouza, U.S. Patent Number 4,684,353. Itoh teaches a fluorescent display device that comprises a vacuum envelope comprising an anode electrode wherein a phosphor is deposited on an anode conductor and an electron source (see

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column 3, lines 1-33). Column 4, lines 51-55 of the Itoh reference discloses that red and green phosphors can be deposited on the anode conductors. The Itoh reference does not specifically disclose the composition of the red and green phosphors deposited onto the anode conductor. The deSouza reference discloses a phosphor mixture comprising copper-activated zinc sulfide phosphor (63%) and strontium titanate (15%) as per instant claims 1-2 and 5-7 (see Example 4). A phosphor mixture affects the luminance and efficiency of a display device. Therefore, it would have been obvious to one of ordinary skill in the art to apply the phosphor mixture of the deSouza reference to the Itoh in order to obtain a device that has increased efficiency, reliability and luminescence. The reference does not specifically disclose that the strontium titanate is a phosphor. Strontium titanate crystals are luminous. Therefore, it would have been obvious to one of ordinary skill in the art to have the strontium titanate as a phosphor as the crystal have a luminescent effect.


7. Claims 3-4 and 10-11 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. The prior art does not provide for a mixture phosphor comprising a phosphor of a red luminous color devoid of Cd; and a phosphor of a green family luminous color devoid of Cd, wherein a luminous color the mixture phosphor is one of warm colors ranging from greenish yellow, yellow, yellowish orange, orange and reddish orange and red, further including the red luminous color is  $\text{SrTiO}_3\text{:Pr}$  or  $\text{SrTiO}_3\text{:Pr, Al}$ . Additionally, the prior art does not provide for a fluorescent display device comprising a vacuum envelope including an anode electrode formed by pasting mixture phosphor comprising a phosphor of a red luminous color devoid of Cd; and a phosphor of a green family luminous color devoid of Cd,

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wherein a luminous color the mixture phosphor is one of warm colors ranging from greenish yellow, yellow, yellowish orange, orange and reddish orange and red, further including the red luminous color is  $\text{SrTiO}_3\text{:Pr}$  or  $\text{SrTiO}_3\text{:Pr, Al}$ .

Any inquiry concerning this communication or earlier communication from the examiner should be directed to Camie S. Thompson whose telephone number is (571) 272-1530. The examiner can normally be reached on Monday through Friday from 7:30 am to 4:00 pm. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rena L Dye, can be reached at (571) 272-3186. The fax phone number for the Group is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
RENA DYE  
SUPERVISORY PATENT EXAMINER  
A.U. 1774 11/21/05